

WHAT IS CLAIMED IS:

1. A double metal cyanide (DMC) catalyst comprising:  
at least one double metal cyanide compound;  
5 at least one organic complexing ligand lacking fluorine atoms; and  
at least one fluorine-containing complexing ligand.
2. The double metal cyanide (DMC) catalyst according to Claim 1, further  
comprising water and/or at least one water-soluble metal salt.  
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3. The double metal cyanide (DMC) catalyst according to Claim 1, wherein  
the double metal cyanide compound comprises zinc hexacyanocobaltate(III).
4. The double metal cyanide (DMC) catalyst according to Claim 1, wherein  
15 the organic complexing ligand comprises tert.-butanol.
5. The double metal cyanide (DMC) catalyst according to Claim 1, wherein  
the catalyst comprises from about 1 to about 80 wt.% of one or more fluorine-  
containing complexing ligands.  
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6. A process for the preparation of a DMC catalyst, comprising the steps of:  
  
forming a catalyst by reacting in aqueous solution  
at least one metal salt with at least one metal cyanide salt,  
25 at least one organic complexing ligand lacking fluorine atoms, and  
one or more fluorine-containing complexing ligands;  
  
isolating the catalyst;  
washing the catalyst; and  
30 optionally,  
drying the catalyst.

7. In a process for the preparation of a polyether polyol by polyaddition reaction between an alkylene oxide and a starter compound having active hydrogen atoms, the improvement comprising carrying out the polyaddition in the presence of one or more DMC catalysts according to Claim 1.

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8. A polyether polyol prepared by the process according to Claim 7.